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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/532,198 | SANCHEZ ET AL. | |
| | Examiner | Art Unit | |
| | SON T. HOANG | 2165 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-6,8,10-16,18-26,37-47 and 63-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 8, 10-16, 18-26, 37-47, and 63-84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *July 31, 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Status*

1. The preliminary amendment filed on April 21, 2005 is eligible to be entered.

This instant application having Application No. 10/532,198 has a total of 56 claims pending in this instant Office action.

### *Oath/Declaration*

2. The Applicant's oath/declaration has been reviewed by the Examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63.**

### *Information Disclosure Statement*

3. As required by **M.P.E.P. 609(C)**, the Applicant's submissions of the Information Disclosure Statement dated July 31, 2006 is acknowledged by the Examiner. The cited references have been considered in the examination of the claims now pending with the exceptions of all crossed-out documents since they contain biological information which are irrelevant to the claimed invention. As required by **M.P.E.P 609 C(2)**, a copy of the PTOL-1449 initialed and dated by the Examiner is attached to the instant Office action.

### *Priority / Filing Date*

4. The Applicant's claim for priority of U.S. Application No. 60/420,216, filed on October 22, 2002 is confirmed. The Examiner takes the filing date of October 22, 2002 into consideration.

### *Abstract*

5. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text.

The abstract of the disclosure is further objected due to the use of implied language. Note that in the abstract, the language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc… See MPEP § 608.01(b).

Note that in the abstract, Applicant cites "*Disclosed are compositions and method for …*" This citation clearly provokes the use of implied language. Appropriate correction is required.

### *Drawings*

6. The drawings were received on April 21, 2005. These drawings are acceptable for examination purposes.

### *Claim Objections*

7. **Claims 5**, **8**, **16**, **18-19**, **26**, **64**, and **81**, are objected for having the following informalities:

Regarding **claim 5**, a period (.) is not presented to end the last limitation.

Regarding **claim 8**, the word '*Orracle*' on line 2 is being misspelled. The Examiner believes the correct word is '*Oracle*' unless specified otherwise by the Applicant.

Regarding **claims 16**, **18-19**, **26**, **64** and **81**, the abbreviations "*Genbank, Pfam, Prodom, Prosite, Tmpred, Signal P*" (**claim 16**), '*BLAST*' (**claim 18**), '*SMEDDb*' (**claim 19**), '*cDNA*' (**claim 26**), '*Blast*' (**claim 64**), and '*GridFTP*' (**claim 81**) used in the claims have no well-recognized meanings in the field of information processing. The usage of said abbreviations leaves the readers in doubt as to the meaning of the technical features to which it refers. Hence, the definition(s) of the subject mater(s) of said claims is/are rendered ambiguous. Appropriate correction(s) is/are required

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 64**, **66-84** are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

Regarding **claim 5**, the term "*each node*" in step (j) lacks antecedent basis since it is unclear whether "*each node*" refers to the completed nodes or the uncompleted nodes in step (h).

Regarding **claim 64**, the term "*the database*" on line 3 lacks antecedent basis since no database has been mentioned prior to the term.

Regarding **claims 66-84**, they refer to "*the system of claim 65*" whist **claim 65** has no '*system*' that is being explicitly claimed.

Regarding **claim 75**, the claim is not complete. It is not clear at all where the database is stored. Appropriate correction is required. Furthermore, the claim itself is obscured by the citation of "*the first and second generations second*

*period search produces database*". It is unclear whether the first and second generations are of the second periodic search or not. Applicant is strongly advised to clarify the claim.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. **Claims 1**, **3**, and **63** are rejected under 35 U.S.C. 102(e) as being anticipated by Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*).

Regarding **claim 1**, Yao clearly shows and discloses a method for creating a database for managing multiple types of biological information (*Figure 2*) comprising:

obtaining a form of biological information (*new genome entry comprises sequence ID and source ID are obtained*, [Figure 2]),

inputting the biological information into the database as a new record, wherein the record is associated with a unique identifier (*new genome entry is being added to the comparison database*, [0086]),

comparing the information in the record to the information already present in the database (*When a new entry is added to the comparison database 210, the Gene Update process 102 may compare the Sequence ID and Source ID of the new entry to entries in a Biomolecular Sequence ID table of the comparison database, as in 212*, [0086]),

determining whether the information in the new record already exists in the database (*If there is a direct match between the Sequence ID and Source ID of the new entry, and an entry in the Biomolecular Sequence ID table of the comparison database, the new entry may be discarded*, [0086]),

adding the information to the database if it is not redundant to the database information, thereby forming a set of records in the database, where each record is associated with a unique identifier (*If there is not a direct match between the Sequence ID and Source ID of the new entry, and any entry in the Biomolecular Sequence ID table of the comparison database, the new entry may be added to the Biomolecular Sequence ID table and a Gene Associate table 214*, [0086]),

creating at least one module for a specific type of biological information that is associated with each unique identifier (*the Sequence ID and Source ID of the new entry may be placed on a queue 214 to determine the GeneView ID to assign to the new entry*, [0086]),

obtaining a form of biological information associated with a module in the database (*When a new GeneView ID has been assigned to a new entry 230, the Gene Update process 102 may inform the GeneView Manager 108 of the new entry and map the new GeneView ID against external databases 232*, [0088]),

associating the biological information with the correct module in the database, and associating the biological information with the correct unique identifier ([Figure 8]).

Regarding **claim 3**, Yao clearly shows and discloses a method of displaying an executive summary of biologically significant information (*Abstract*) on a computer wherein the computer comprises a processing means, a memory means, an input means and an output means ([0015]) comprising:

collecting information from individual information modules related to a unique identifier, wherein the unique identifier number is associated with a particular record (*the Sequence ID and Source ID of the new entry may be placed on a queue 214 to determine the GeneView ID to assign to the new entry*, [0086]. *When a new GeneView ID has been assigned to a new entry 230, the Gene Update process 102 may inform the GeneView Manager 108 of the new entry and map the new GeneView ID against external databases 232*, [0088]);

producing a coordinated display of information from the individual modules (*the ID Match step 410 compares the Sequence ID and Source ID of an entry in the external database 406 with the Sequence ID and Source ID of each entry in the comparison database 404. If a match is found 412, the entry in the external database 406 is added to a Match List 440*, [0098]); and

displaying the information from the individual modules using a visual display means producing the executive summary (*Figure 8*).

Regarding **claim 63**, Yao clearly shows and discloses a computer system ([0015]) having a memory means, a data input means, and a visual display means, the memory means containing the first set of sequences, and modules containing information to be coordinated with the first set of sequences, and the memory means being operable to retrieve coordinate data from the memory means and to display an executive summary on the visual display means, the executive summary containing a representation of the first set of sequences, and information from the modules (*Abstract*).

12. **Claims 44-47**, **65-66**, and **68** are rejected under 35 U.S.C. 102(e) as being anticipated by Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*).

Regarding **claim 44**, Blair clearly shows and discloses a computer system for comparing a first set of sequences to a second set of sequences (*Abstract*), the system comprising a first database containing a first set of sequences, a second database containing a second set of sequences, a network switch in communication with both the first and second databases (*Figure 5*).

Regarding **claims 45-46**, Blair discloses the network switch is also in communication with a set of computer search nodes (*Figure 5*) and the system is scalable (*comparison process that is scalable to thousands of CPUs*, [Column 7, Lines 56-57]).

Regarding **claim 47**, Blair further discloses there are two or more computer search nodes (*Figure 5*).

Regarding **claim 65**, Blair clearly shows and discloses a computer cluster (*Figure 5*) comprising,

a first database node (*query database 51*), a second database node (*subject database 52*), a network switch and at least two computer search nodes (*slave CPUs 56*),

wherein the network switch is in communication with the first database node, the second database node, and the computer search nodes (*network 58*).

Regarding **claim 66**, Blair further discloses the first database node comprises a database of biologically significant information (*sequence analysis software system for efficient comparison of two large datasets (genome-genome, genome-database, database-database)*, [Column 1, Lines 15-22]).

Regarding **claim 68**, Blair further discloses the network switch uploads the information from the first database and uploads the information from the second database (*send first data element from query database as well as the first data element from subject database to master CPU*, [Column 9, Lines 64-67]).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. **Claims 2**, and **4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*) in view of Seilhamer et al. (*Pat. No. US 6,023,659, published on February 8, 2000; hereinafter Seilhamer*).

Regarding **claim 2**, Yao clearly shows and discloses a method of creating an executive summary of biologically significant information (*Figure 2*), comprising:

inputting biologically significant information in a database (*new genome entry is being added to the comparison database*, [0086]);

checking the biologically significant information against the database for redundancy (*If there is a direct match between the Sequence ID and Source ID of the new entry, and an entry in the Biomolecular Sequence ID table of the comparison database, the new entry may be discarded. If there is not a direct match between the Sequence ID and Source ID of the new entry, and any entry in the Biomolecular Sequence ID table of the comparison database, the new entry may be added to the Biomolecular Sequence ID table and a Gene Associate table 214. Moreover, the Sequence ID and Source ID of the new entry may be placed on a queue 214 to determine the GeneView ID to assign to the new entry*, [0086]);

sending sequences from the biologically significant information to a second database for comparison (*When a new GeneView ID has been assigned to a new entry 230, the Gene Update process 102 may inform the GeneView*

*Manager 108 of the new entry and map the new GeneView ID against external databases 232*, [0088];

receiving replies from the second database in response to a comparison query (*the ID Match step 410 compares the Sequence ID and Source ID of an entry in the external database 406 with the Sequence ID and Source ID of each entry in the comparison database 404. If a match is found 412, the entry in the external database 406 is added to a Match List 440*, [0098]);

Seilhamer discloses:

saving the replies in the database, thereby creating a module (*Figure 4C presents a "Project Information Results" screen 340 which returns after a search is executed with Project Information Query screen 324. As mentioned, this screen presents information about each project identified in the search from screen 324. Thus, this screen presents "first level" information (i.e., project information) in the drilling process mentioned above. Specific presented information may include, in a record 342, a ProjectID, a project Status, a Representative SequenceID, a Hit.sub.-- ID, a Hit Description, a Source (i.e., the external database in which the hit occurred), a BLAST score for the hit, and a P-Value for the hit*, [Column 21, Lines 44-55]);

collecting all of the modules associated with each identifier (*Some of the information in record 342 is linked (e.g., via an HTML link) to other information in the database. Such information is indicated by underlining on the pertinent value. Of particular relevance to the three-tiered approach described here is a link from*

*the ProjectID value. If a user selects this value, by double clicking on it for example, the system returns a Sequence Information Results screen such as screen 344 shown in Figure 4D*, [Column 21, Line 61 → Column 22, Line 1]); and

outputting the information contained in the modules for each unique identifier in an executive summary (*Figure 4D shows a list 346 of all sequences within the selected project. Thus, this screen presents the second level information which the user may review to evaluate the project's assembly*, [Column 21, Line 61 → Column 22, Line 1]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Seilhamer with the teachings of Yao for the purpose of providing a relational database system for storing biomolecular sequence information in a manner that allows sequences to be catalogued and searched according to one or more protein function hierarchies ([Abstract] of Seilhamer).

Regarding **claim 4**, Yao clearly shows and discloses a method of displaying an executive summary containing information related to a unique identifier associated with a first set of sequences (*Abstract*) comprising:

(a) determining a first set of sequences (*new genome entry is being added to the comparison database*, [0086]);

(b) providing a computer system having a memory means, a data input means, and a visual display means, the memory means containing the first set of

sequences, and modules containing information to be coordinated with the first set of sequences, and the memory means being operable to retrieve coordinate data from the memory means and to display an executive summary on the visual display means ([0015]), the executive summary containing a representation of the first set of sequences, and information from the modules (*Figure 8*);

(c) uploading information from a second database containing sequence comparison data to the computer system (*the ID Match step 410 compares the Sequence ID and Source ID of an entry in the external database 406 with the Sequence ID and Source ID of each entry in the comparison database 404. If a match is found 412, the entry in the external database 406 is added to a Match List 440*, [0098]).

Seilhamer discloses:

(d) creating a module based on information obtained from the second database containing sequence comparison data (*Figure 4C presents a "Project Information Results" screen 340 which returns after a search is executed with Project Information Query screen 324. As mentioned, this screen presents information about each project identified in the search from screen 324. Thus, this screen presents "first level" information (i.e., project information) in the drilling process mentioned above. Specific presented information may include, in a record 342, a ProjectID, a project Status, a Representative SequenceID, a Hit.sub.-- ID, a Hit Description, a Source (i.e., the external database in which the*

*hit occurred), a BLAST score for the hit, and a P-Value for the hit*, [Column 21, Lines 44-55]);

(e) searching for other modules associated with the unique identifier (*Some of the information in record 342 is linked (e.g., via an HTML link) to other information in the database. Such information is indicated by underlining on the pertinent value. Of particular relevance to the three-tiered approach described here is a link from the ProjectID value. If a user selects this value, by double clicking on it for example, the system returns a Sequence Information Results screen such as screen 344 shown in Figure 4D*, [Column 21, Line 61 → Column 22, Line 1]);

(f) creating an executive summary containing information from the modules (*Some of the information in record 342 is linked (e.g., via an HTML link) to other information in the database. Such information is indicated by underlining on the pertinent value. Of particular relevance to the three-tiered approach described here is a link from the ProjectID value. If a user selects this value, by double clicking on it for example, the system returns a Sequence Information Results screen such as screen 344 shown in Figure 4D*, [Column 21, Line 61 → Column 22, Line 1]);

(g) displaying the executive summary containing information on the first set of sequences and all the modules associated therewith (*Figure 4D shows a list 346 of all sequences within the selected project. Thus, this screen presents*

*the second level information which the user may review to evaluate the project's assembly*, [Column 21, Line 61 → Column 22, Line 1]).

16. **Claims 5-6**, **14-16**, **18-19**, **23-26**, and **37-39**, and **42-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Eadline (*Pat. No. 5,471,622, published on November 28, 1995*), and further in view of Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*).

Regarding **claim 5**, Blair clearly shows and discloses a method of comparing a first set of sequences to a second set of sequences (*Abstract*), the method comprising:

a) uploading the first set of sequences associated with a unique identifier contained as a module in a record in a first database into a network switch node (*send first data element from query database to master CPU*, [Column 9, Lines 64-65]),

b) uploading the second set of sequences contained in a second database into the network switch node (*send first data element from subject database to master CPU*, [Column 9, Lines 66-67]),

c) parsing the first set of sequences into subsets of sequences (*the query database is divided into multiple smaller query sub-databases*, [Column 3, Lines 36-38]),

d) allocating each subset of sequences to a search node (*each query sub-database is sent to a separate CPU, as well as the entire subject database*, [Column 3, Lines 39-41]),

e) downloading the second set of sequences to each search node (*each query sub-database is sent to a separate CPU, as well as the entire subject database*, [Column 3, Lines 39-41]),

f) comparing the subset of sequences to the second set of sequences on the search node, thereby forming an alignment, or comparison, of the first set of sequences and the second set of sequences (*perform comparison of query and subject sequence with appropriate sequence comparison algorithm*, [Column 10, Lines 46-49]),

g) monitoring the status of each comparison on each search node, until a particular search node completes the comparison of the subset of sequences being performed, thereby forming a completed node (*choose to keep or discard result based on user-defined significance criteria, also contained in the transmitted sequence comparison parameters. This may include criteria that take into account characteristics of the entire subject and/or query database*, [Column 10, Lines 50-55]),

Eadline discloses:

h) identifying the sequences in the subset of sequence on each node other than the completed node that have not yet been compared to the second

set of sequences forming a set of remaining sequences (*if in step 25 it is determined that the query is not finished, the remaining query is evaluated again in step 22. If parallel sub-queries have been identified in step 24, in step 26 a check is made to determine if other processors are available to accept sub-queries*, [Column 4, Lines 58-64]),

i) parsing the set of remaining sequences into a second subset of sequences (*The list of parallel tasks identified by each processor is implemented as a data structure called the parallel stack. Any task identified that can be solved in parallel is placed on the parallel stack. The parallel stack is a "last in first out" data structure that is basically an organized list of parallel tasks. Every time a valid parallel process is found, it is placed on the parallel stack*, [Column 5, Lines 52-58]),

j) allocating the second subset of sequences onto each node (*in step 26 it is determined that other processors are available to accept sub-queries, then an identified sub-query is distributed in step 28 to one such processor and upon solution of the distributed query, results are returned to the processor which distributed them*, [Column 5, Lines 1-4]), and

k) comparing the second subset of sequences to the second set of sequences (*Once all parallel tasks have been identified for a given clause or a task is identified that requires information from an unsolved task on the parallel stack, the parallel stack is "solved"*, [Column 5, Lines 52-58]),

l) and repeating steps g-k until each sequence in the first set of sequences has been compared to each sequence in the second set of sequences (*After or during the remote solution of a sub-query the processor checks, in step 33, to see if there are any more sub-queries to be solved. If in step 33 it is determined that there are more sub-queries to be solved, either sequentially or on other remote processors, then the cycle is repeated using step 26*, [Column 5, Lines 5-10]),

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Eadline with the teachings of Blair for the purpose of evaluating a problem to determine portions thereof which may be executed in parallel, and for distributing such portions among the parallel processors present in a computer system ([Column 1, Lines 18-21]).

Blair, as modified by Eadline, does not explicitly disclose updating the information in the first database with the results of the comparison of the first set of sequences to the second set of sequences.

Yao discloses Figure 3B shows that when the external database is a relational database, the Parser 110 may load parameters from the GeneView RC File 106 corresponding to the particular external relational database via the GeneView Manager 108. These parameters may then be used to determine the location of the external relational database, generate one or more queries to the external relational database 312, retrieve the results of the one or more queries

from the external relational database 314, and store the results in a result file and a log file 316, [0091]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Yao with the teachings of Blair, as modified by Eadline, for the purpose of analyzing data as well as searching databases of known biomolecular sequences for a biomolecular sequence that matches or closely resembles a given biomolecular sequence ([0008] of Yao).

Regarding **claim 6**, Blair further discloses the network database is in communication with a set of computer nodes and is scalable (*comparison process that is scalable to thousands of CPUs*, [Column 7, Lines 56-57]).

Regarding **claim 14**, Yao further discloses the second database is a mirror database (*The term "external database" refers to a database located outside all internal databases. The external database may be used, for example, to provide some descriptive information on biomolecular sequences stored in the internal database. In a specific embodiment, the external database is GenBank and associated databases maintained by the National Center for Biotechnology Information (NCBI), part of the National Library of Medicine*, [0061]).

Regarding **claim 15**, Yao further discloses a method, wherein the mirror database mines a National Center for Biotechnology Information database (*The term "external database" refers to a database located outside all internal databases. The external database may be used, for example, to provide some*

*descriptive information on biomolecular sequences stored in the internal database. In a specific embodiment, the external database is GenBank and associated databases maintained by the National Center for Biotechnology Information (NCBI), part of the National Library of Medicine*, [0061]).

Regarding **claim 16**, Yao further discloses a method, wherein the mirror database mines Genbank, Pfam, Prodom, Prosite, Tmpred and Signal P database (*The term "external database" refers to a database located outside all internal databases. The external database may be used, for example, to provide some descriptive information on biomolecular sequences stored in the internal database. In a specific embodiment, the external database is GenBank and associated databases maintained by the National Center for Biotechnology Information (NCBI), part of the National Library of Medicine*, [0061]).

Regarding **claim 18**, Blair further discloses a method, wherein the search node performs a BLAST search (*database-to-database comparisons using both computationally intensive, exact methods such as Smith-Waterman, as well as heuristic methods such as BLAST*, [Column 6, Lines 45-48]).

Regarding **claim 19**, Yao further discloses a method, wherein the first database is SMEDDb (*The term "internal database" refers to a database maintained within a local computer network. It contains biomolecular sequences associated with a project. It may also contain information associated with sequences including, but not limited to, a library in which a given sequence is found and descriptive information about a likely gene associated with the*

*sequence. The internal database may typically be maintained as a private database behind a firewall within an enterprise network*, [0060]).

Regarding **claim 23**, Yao further discloses the various modules can be viewed in the executive summary (F*igure 8*).

Regarding **claim 24**, Yao further discloses at least one module comprises the biologically significant information itself (F*igure 8*).

Regarding **claim 25**, Yao further discloses the biologically significant information comprises sequence data (F*igure 8*).

Regarding **claim 26**, Yao further discloses the first set of sequence data comprise cDNA data, expressed sequence tags, gene expression patterns, sequence comparison data obtained from the second database, hybridization data, in situ hydribidation data, two-hybrid data, pharmacology data, immunohistological data, expression patterns, or information from a publicly accessible database (*The term "gene" refers to a nucleic acid sequence that comprises control and coding sequences necessary for the production of a polypeptide or precursor. The polypeptide can be encoded by a full length coding sequence or by any portion of the coding sequence. The gene may be derived in whole or in part from any source known to the art, including a plant, a fungus, an animal, a bacterial genome or episome, eukaryotic, nuclear or plasmid DNA, CDNA, viral DNA, or chemically synthesized DNA*, [0044]).

Regarding **claim 37**, Yao further discloses analyzing the sequence comparison data to determine categories, subcategories and keywords for the unique identification number (*Figure 8*).

Regarding **claim 38**, Blair further discloses the biologically significant information can be sorted by any of the characteristics associated with the modules (*FIG. 4B illustrates the processing of results for a given query sequence. When all task results 46 that contribute significant query/subject sequence pairs for this query sequence have been completed by tasks, received by the client, and appended to the query results file 49, the query results file is processed 47 to produce BLAST output 48. The results are sorted by significance, and a text report for the query sequence in question is produced*, [Column 13, Lines 31-40]).

Regarding **claim 39**, Yao further discloses the information in the modules is associated with an executive summary (*Figure 8*).

Regarding **claim 42**, Yao further discloses a method, wherein the first database comprises a module for spatial information and a module for temporal information (*The GeneView RC File 106 contains parameters for each external database. The parameters include, but are not limited to, an Internet, network, World Wide Web, or local computer address of the external database, a timestamp denoting the last known time that the external database was updated, and an Internet, network, World Wide Web, or local computer address denoting*

*where the results of a comparison between the external database and the comparison database are to be stored*, [0079]).

Regarding **claim 43**, Yao further discloses providing a search interface accessible by a web browser (*Figures 6-7*).

17. **Claims 8**, and **20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Eadline (*Pat. No. 5,471,622, published on November 28, 1995*), and further in view of Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*), and further in view of Mjalli et al. (*Pub. No. US 2003/0125315, filed on April 11, 2002; hereinafter Mjalli*).

Regarding **claim 8**, Blair, as modified by Eadline and Yao, does not disclose the limitation of this instant claim.

Mjalli discloses the databases use Cold Fusion or Orracle *(To generate the user interface and to respond to user requests, the web server 2008 accesses a database (DB) 2010, such as like MySQL, Oracle, ISIS and others*, [1199]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Mjalli with the teachings of Blair, as modified by Eadline and Yao, for the purpose of discovering new pharmaceutical compositions by using biological screening methods utilized to maximize the probability of success while minimizing the time

and number of wet laboratory steps necessary to achieve the success ([Abstract] of Mjalli).

Regarding **claim 20**, Mjalli further discloses the second database comprises an HTML file readable by a web browser (*Figure 9 illustrates the general process of presenting and updating the user interface and scheduling and executing jobs in an embodiment of this system. In the embodiment shown, the interface is an html page named UI.html 902. UI.html includes top.html 904, which includes a dynamic flash component, contentCreator 906, which generates web page content based on values passed to the script by a flash movie or other user interface element*, [1160]).

Regarding **claim 21**, Mjalli further discloses the HTML file incorporates an image relating to a sequence (*Figure 21f*).

Regarding **claim 22**, Mjalli further discloses accessing the HTML file remotely through a computer network (*Figure 1*).

18. **Claims 10-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Eadline (*Pat. No. 5,471,622, published on November 28, 1995*), and further in view of Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*), and further in view of Wong (*Pat. No. US 6,343,275, filed on June 16, 1999*).

Regarding **claim 10**, Blair, as modified by Eadline and Yao, does not explicitly disclose the step of identifying which records in the first database have changed after the step of updating.

Wong discloses a nightly update process is performed in which consistency checks are performed and in which accounting information (including sales tax information) is collected, journal entries made, and general-ledger entries posted. When records are edited, they are flagged to be checked during the nightly update so that adjusting entries may be made if necessary ([Column 4, Lines 54-67]).

Regarding **claim 11**, Wong further discloses a report is generated that indicates which records have changed since the last updating (*When records are edited, they are flagged to be checked during the nightly update so that adjusting entries may be made if necessary*, [Column 4, Lines 54-67]).

Regarding **claim 12**, Wong further discloses the report is automatically sent via e-mail to a predetermined address (*As a result of the nightly update, a nightly update report is generated, all or selected portions of which are automatically emailed to responsible individuals for receipt the following morning*, [Column 35, Lines 54-57]).

Regarding **claim 13**, Wong further discloses the changed information is flagged, the flags being searchable in the database (*When records are edited, they are flagged to be checked during the nightly update so that adjusting entries may be made if necessary*, [Column 4, Lines 54-67]).

19. **Claims 40-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Eadline (*Pat. No. 5,471,622, published on November 28, 1995*), and further in view of Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*), and further in view of Raz et al. (*Pat. No. US 5,852,715, published on December 22, 1998; hereinafter Raz*).

Regarding **claim 40**, Blair, as modified by Eadline and Yao, does not explicitly disclose the second database is continually updated on a separate node.

Raz discloses mirroring the working database to the remote data storage system to produce a remote database that is a mirror of the working database, wherein the step of mirroring is performed over the data communications link and wherein the updating and the mirroring take place concurrently so that changes made to the local database are recorded in the remote database on an ongoing basis, and wherein the support copy is derived from the remote database and wherein the second host processor uses the support copy for the purpose of implementing decision support functions ([Column 2, Lines 47-58]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Raz with the teachings of Blair for the purpose of implementing decision support in an environment including a data storage system and a plurality of host processors at

least some of which are connected to the data storage system by utilizing the working database and the support copy of the database ([Abstract] of Raz).

Regarding **claim 41**, Raz further discloses the updating of the second database occurs over the Internet (*Figure 1 shows a plurality of host processors 14(1) through 14(n) are connected to primary data storage system 10 and a different plurality of host processors 16(1) through 16(m) are connected to data storage system 12. The two systems are connected to each other through a high speed communication link 18 over which data can be transferred between the two systems. It includes two data storage systems 10 and 12, which are located at geographically remote locations from each other*, [Column 3, Lines 28-40]).

20. **Claim 64** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yao et al. (*Pub. No. US 2003/0036857, provisionally filed on August 1, 2001; hereinafter Yao*) in view of Keppler et al. (*Pub. No. US 2001/0049676, published on December 6, 2001; hereinafter Keppler*).

Regarding **claim 64**, Yao clearly shows and discloses a computer system comprising a cluster computer ([0015]) to perform Blast searches for sequence comparison (*Abstract*).

Yao does not explicitly disclose that the system can semi-automatically process a plurality of Blast searches when the databases change, producing a dynamic database that is regularly and automatically updated.

Keppler discloses the entries in the search routing database 24 can be updated to accurately reflect the data in databases 28, 30, 32 in a number of

ways, as is well known in the art. For example, the search-routing database 24 could be automatically, or manually, updated each time any one of the databases 28, 30, 32 is updated. Thus, for example, if a record is added to database 28, the search-routing database 24 would be checked to see if it already contained a record corresponding to the data added to database 28. If it did not, then a record would be added to the search-routing database 24 that corresponded to the newly added data. Deletions and modifications to data stored in databases 28, 30, 32 could be performed in a similar manner ([0049]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Keppler with the teachings of Yao for the purpose of directing database search requests to only those databases that may contain results to the search request using a search-routing database that contains a subset of the data fields from the other databases in the network, along with a field indicating the database to which the search request should be routed ([Abstract] of Keppler).

21. **Claims 67**, and **72-73** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Raz et al. (*Pat. No. US 5,852,715, published on December 22, 1998; hereinafter Raz*).

Regarding **claims 67**, and **72**, Blair does not disclose the second database node comprises a database that is mirrored, and the second database node is continually updated.

Raz discloses mirroring the working database to the remote data storage system to produce a remote database that is a mirror of the working database, wherein the step of mirroring is performed over the data communications link and wherein the updating and the mirroring take place concurrently so that changes made to the local database are recorded in the remote database on an ongoing basis, and wherein the support copy is derived from the remote database and wherein the second host processor uses the support copy for the purpose of implementing decision support functions ([Column 2, Lines 47-58]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Raz with the teachings of Blair for the purpose of implementing decision support in an environment including a data storage system and a plurality of host processors at least some of which are connected to the data storage system by utilizing the working database and the support copy of the database ([Abstract] of Raz).

Regarding **claim 73**, Raz further discloses the first database has at least 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 3, 5, 8, 10, 12, 15, 20, 30, 40, 50, 75, or 100 gigabytes of data (*the mirroring system is used for performing decision-support functions with very large databases, e.g. 10's of gigabytes of data*, [Column 3, Lines 1-3]).

22. **Claims 69-71** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Eadline (*Pat. No. 5,471,622, published on November 28, 1995*).

Regarding **claim 69**, Blair does not disclose parsing the information from the first database into a number of subsets equal to the number of computer search nodes and distributes one subset to each computer search node.

Eadline discloses execution of the user program commences on a processor in the network, which is the "root" processor for that program. The root processor identifies parallel portions of the program (also referred to as parallel "tasks" or "jobs") based upon the results of its initial execution, and distributes them to processors to which it is coupled until it has distributed all parallel tasks identified or until there are no coupled processors available to receive parallel tasks ([Column 3, Lines 28-35]).

It would have been obvious to a person with ordinary skills in the art at the time of the invention was made to incorporate the teachings of Eadline with the teachings of Blair for the purpose of balancing the workloads of one processor by generating lists of parallel-executable tasks and distributing them to other processors in the network ([Abstract] of Eadline).

Regarding **claim 70**, Blair further discloses the network switch downloads the second database to each computer search node (*dividing a database-to-database comparison into multiple subcomparisons, the query database is divided into multiple smaller query sub-databases. Each query sub-database is sent to a separate CPU, as well as the entire subject database, and the comparison is performed*, [Column 3, Lines 36-41]).

Regarding **claim 71**, Eadline further discloses the network switch monitors the activity on the computer search nodes and when the activity on one computer search node is complete identifies the activity remaining to be completed on the other computer search nodes (*if in step 25 it is determined that the query is not finished, the remaining query is evaluated again in step 22. If parallel sub-queries have been identified in step 24, in step 26 a check is made to determine if other processors are available to accept sub-queries*, [Column 4, Lines 58-64]), parses the remaining activity into a second set of subsets equal to the number of computer search nodes in the system, and distributes one second subset to each computer search node (*The list of parallel tasks identified by each processor is implemented as a data structure called the parallel stack. Any task identified that can be solved in parallel is placed on the parallel stack. The parallel stack is a "last in first out" data structure that is basically an organized list of parallel tasks. Every time a valid parallel process is found, it is placed on the parallel stack*, [Column 5, Lines 52-58]).

23. **Claims 74**, and **82** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Carlson et al. (*Pub. No. US 2003/0217078, filed on May 20, 2002; hereinafter Carlson*).

Regarding **claim 74**, Blair does not disclose the periodic search is performed at least three times, producing a first, second, and third generation of the periodic output.

Carlson discloses in Figure 5 reciting database access times for database queries performed during a plurality of time intervals throughout a plurality of time periods ([0017]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Nixon with the teachings of Blair for the purpose of scheduling and performing database maintenance, where the database includes information regarding one or more information storage media moveably disposed in a data storage and retrieval system, which includes selecting a first time period, commencing that first time period at a first time and ending that first time period at a third time, performing one or more database queries during that first time period, recording the number of database queries performed during each of the two or more first time intervals, determining the least utilized first time interval where that least utilized first time interval commenced at a second time, calculating a first time difference between the first time and the second time, and scheduling database maintenance at a fourth time ([Abstract] of Carlson).

Regarding **claim 82**, Carlson further discloses the periodic search is performed on a dedicated node called a periodic search node (*Figure 4*).

24. **Claim 76** is rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Jagadish et al. (*Pat. No. US 6,351,753, published on February 26, 2002; hereinafter Jagadish*).

Regarding **claim 76**, Blair does not disclose the second database is a dynamic database, in which there are at least a first generation, a second generation, and a third generation of the database.

Jagadish discloses three database versions in a distributed database according to an embodiment of the present invention. As shown in FIG. 1, the non-interference requirement is satisfied with only three versions 100, 200, 300 in a distributed database. Further, one of the three versions is transient, and the protocol is relatively simple in comparison to existing schemes. The AVA3 protocol uses two-phase locking for concurrency control of update transactions, and read transactions do not acquire any locks. Instead, read transactions are serialized with respect to updates by using appropriate data versions ([Column 3, Lines 50-61]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Jagadish with the teachings of Blair for the purpose of using asynchronous version advancement in a three-version database to avoid interference between read-only queries and update transactions ([Abstract] of Jagadish).

25. **Claims 77-80** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Jagadish et al. (*Pat. No. US 6,351,753, published on February 26, 2002; hereinafter Jagadish*), and further in view of Raz et al. (*Pat. No. US 5,852,715, published on December 22, 1998; hereinafter Raz*).

Regarding **claim 77**, Blair, as modified by Jagadish, does not disclose at least two generations of the first database are stored in globally accessible space, and at least one generation of the first database is stored remotely.

Raz discloses using the mirroring capability on the original database in volume 80 by generating a concurrent copy locally in volume 82 using the BRF facility and this is remotely mirrored to secondary data storage system 12, [Column 9, Lines 59-65]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Raz with the teachings of Blair, as modified by Jagadish, for the purpose of implementing decision support in an environment including a data storage system and a plurality of host processors at least some of which are connected to the data storage system by utilizing the working database and the support copy of the database ([Abstract] of Raz).

Regarding **claim 78**, Raz further discloses a system, wherein two generations of the first database are stored locally (*when data storage system 10 is configured to implement local mirroring, it generates and maintains the two copies of data by writing all modified data to two different disk devices within the same data storage system and it does this in a manner that is transparent to the host processors. Everything that is written to one volume is also written to a mirror volume and reads occur to both volumes, whichever produces the faster response*, [Column 5, Lines 9-15]).

Regarding **claim 79**, Raz further discloses the analysis search can optionally query the first database stored globally or can copy the first database to a local node (*when data storage system 10 is configured to implement local mirroring, it generates and maintains the two copies of data by writing all modified data to two different disk devices within the same data storage system and it does this in a manner that is transparent to the host processors. Everything that is written to one volume is also written to a mirror volume and reads occur to both volumes, whichever produces the faster response*, [Column 5, Lines 9-15]).

Regarding **claim 80**, Raz further discloses a system, wherein the first database is transferred from globally accessible space using remote copy (*mirroring the working database to the remote data storage system to produce a remote database that is a mirror of the working database, wherein the step of mirroring is performed over the data communications link and wherein the updating and the mirroring take place concurrently so that changes made to the local database are recorded in the remote database on an ongoing basis*, [Column 2, Lines 46-55]).

26. **Claim 81** is rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Jagadish et al. (*Pat. No. US 6,351,753, published on February 26, 2002; hereinafter Jagadish*), and further in view of Raz et al. (*Pat. No. US 5,852,715, published on December 22, 1998; hereinafter Raz*), and further in view of Globus

(*"GridFTP Universal Data Transfer for the Grid", September 5, 2000, http://www.globus.org/toolkit/docs/3.0/gridftp/C2WPdraft3.pdf*).

Regarding **claim 81**, Blair, as modified by Jagadish and Raz, does not disclose the first database is transferred from globally accessible space using GridFTP.

Globus discloses GirdFTP as a widely implemented and well-understood IETF standard file transfer protocol and it supports transfers between client and server as well as third party transfers between two servers (*Page 6*).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Globus with the teachings of Blair, as modified by Jagadish and Raz, for the purpose of ensuring storage systems to have high-performance data transfer capability that automatically interoperates with other storage systems using a common data transfer protocol (*Page 5*).

27. **Claims 83-84** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blair et al. (*Pat. No. US 7,231,390, filed on June 14, 2001; hereinafter Blair*) in view of Carlson et al. (*Pub. No. US 2003/0217078, filed on May 20, 2002; hereinafter Carlson*), and further in view of Naik et al. (*Pub. No. US 2003/0133556, filed on May 30, 2002; hereinafter Naik*).

Regarding **claim 83**, Blair, as modified by Carlson, does not explicitly disclose the second database node comprises a storage means large enough to store at least two generations of the first database.

Naik discloses the remote memory backup (RMBU) backs up the configuration database on an NE to the NETSMART database. At any time, only the last two versions of backup (per NE) are stored in the database. The backed-up NE configuration information can either be extracted onto any machine (with an active FTP daemon) or can be restored from the NE database ([0520]).

It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Naik with the teachings of Blair, as modified by Carlson, for the purpose of utilizing a network element management system which automatically configures itself, when an operator enters a component identifier, for optimal full-featured management of the identified component using an autodiscovery process, and not by any mere lookup ([Abstract] of Naik).

Regarding **claim 84**, Carlson further discloses the periodic search node utilizes an updating scheme, wherein the updating scheme allows updating of the first database and analysis searching of the database without interference (*opportunistically perform database maintenance during operating system start-up, where the database comprises one or more indices regarding one or more portable information storage media disposed in a data storage and retrieval system, and where that data storage and retrieval system includes an operating system, comprising the steps of starting the operating system, determining if database performance is acceptable, and performing database maintenance if database performance is not acceptable*, [0011]).

***Conclusion***

28. These following prior arts made of record and not relied upon are considered pertinent to Applicant's disclosure:

Wallace et al. (*Pat. No. US 6,920,396*) teaches system and method for providing flexible access and retrieval of sequence data from a plurality of biological data repositories.

Bjornson (*Pub. No. US 2002/0194173*) teaches method and apparatus for high-performance sequence comparison.

The Examiner requests, in response to this Office action, support(s) must be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the Examiner in prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

***Contact Information***

29. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Son T. Hoang whose telephone number is (571) 270-1752. The Examiner can normally be reached on Monday – Friday (7:00 AM – 4:00 PM).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Christian Chace can be reached on (571) 272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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